

Presidents

Word

Marketing levy status

Our valued members would be aware that ASPG undertook a review of our 1% marketing levy and in 2023 conducted a vote to either retain the 1% levy or wind the levy back to 0%. A decision to reduce the levy allowed for a choice in future to increase the levy if so desired. That process concluded in late 2023 with 45 members, former members and known growers provided an opportunity to vote.

Only 15 votes were registered, with 13 voting to reduce the levy back to 0% and 2 members voting to maintain the levy at 1%. All the appropriate documentation has been forwarded to the Commonwealth Minister and in January 2024 we were advised by the Commonwealth Department the levy will be reduced to 0% on 1 July 2024. It is estimated there will be more than \$2 million of marketing levy funds remaining to invest in future marketing programs to enhance consumer demand for sweetpotatoes.

Whilst growers will cease paying the marketing levy, the Research and Development levy of 0.5% remains in place and these funds are matched by the Commonwealth Government. Hort Innovation manages these funds to invest in sweetpotato R&D on our growers' behalf.

I would also like to thank Peter Long as Executive Officer for all the work he does for our industry, especially with the Emerging Leaders' Program and the communications project. On the positive side, ASPG and Hort Innovation have improved their relationship because of Peter's continued correspondence and hard work. His understanding of our priorities and what our industry expects has certainly gained traction.

Our AGM guest speakers were the Department of Agriculture and Fisheries (DAF) sweetpotato research and development team, led by Sandra Dennien, as well as Professor Arthur Villordon from the Louisiana State University AgCenter (LSU). Sandra and the team provided research results for the recently completed nematode resistance project. Arthur from LSU is involved in the DAF lead sweetpotato R&D skinning project and was visiting Australia as part of the project. He shared the current science of sweetpotato skins as well as best practice post-harvest handling in USA. An important difference in the US is they produce one crop per year, cure the sweetpotatoes and store them until

packed and marketed. One outcome of the Hort Innovation funded skinning project is to produce a post-harvest best practice sweetpotato manual for Australian conditions.

The ASPG Management Committee meets monthly online for no more than one hour, generally on the third Thursday of the month at 2.00pm Qld time. All members are welcome to join, and we encourage your involvement. Please contact Peter for an invitation.



Troy Prichard
ASPG PRESIDENT

Membership

ASPG is a member-based not-for-profit industry organisation, where members pay a small annual fee. This fee has not been increased in many years and sadly, but reflecting our current times, our membership base has continued to contract. For the year 2023-24 we have 26 members, down from 31 members in 2022-23 and 39 members in 2021-22.

All former members have ceased growing sweetpotatoes for a range of reasons including reaching retirement age and/or lack of profitability. As discussed in my column in the last ASPG newsletter, we have seen significant increases in input costs of labour, fuel, chemicals, and fertilisers, yet stable or declining wholesale prices paid. The reduction in the numbers of growers is not unique to the sweetpotato sector but a trend across horticulture. On the positive side for membership, an estimated 95% of Australian sweetpotatoes are grown by ASPG members.



Peter Long
ASPG Executive
Officer/Secretary

Latest sweetpotato production figures and value

The Australian Horticulture Statistics Handbook 2022/23 was recently released, and I note with interest the trends in sweetpotato production and sales (please refer to detailed article in this newsletter). A summary is provided in the following table. There was an overall drop of 10% in total production from 2021 to 2022 and another slight decline in 2023.

The next figure is the total production value which indicates the price growers receive for sweetpotato sales, and it crashed 27% from 2021 to 2022, improving slightly in 2023. This reduction in return to the industry is in part behind some growers exiting the industry.

A figure of concern is the decline in per capita production from 3.67kg for each person in Australia in 2021 to 3.15kg in 2023. If this trend was to continue it would put further downward pressure on demand and farm gate prices.

The obvious question is how can growers respond? The critical approach is to better manage what you can control. First, ensure you produce and pack quality sweetpotatoes for the market. The second, is to get to know your customer, and what they

Year ending June	2021	2022	Change	2023	Change
Production	104,006t	93,173t	-10%	91,458t	-2%
Production value	\$91.3m	\$66.5m	-27%	\$69.2m	-4%
Fresh supply	94,606t	84,250t	-11%	82,844t	-2%
Supply per capita	3.67kg	3.25kg	-12%	3.15kg	-3%
Food Service supply	20,405t	21,266	+4%	20,911	-2%
Food service value	\$22.5m	\$19.2m	-15%	\$20.1m	+5%

want in volume, quality and timing of supply? This may be a market wholesaler or supermarket. When was the last time you visited the markets in either Brisbane, Sydney or Melbourne? If possible, we would recommend you take make the trip, take a walk around, compare what was on the floor and have a coffee with the agent/s you supply.

My experience in four visits to the Sydney markets, is the reputable agents are open to catching-up and sharing their challenges

and opportunities.

The other element within your control is to be a member of ASPG and get involved to drive the future of our industry. I know most growers are members and that is positive, however it is always good to see fresh faces and new ideas on the management committee.

Further, if you have marketing ideas that you have seen work, please give Troy or I a call and share it. We are always looking for evidenced based marketing ideas.



ASPG Annual General Meeting

ASPG held their annual general meeting in November last year with a strong attendance of 20, participating in person and online. There were no changes in the ASPG executive and management committee for 2023-24. I congratulate and thank those involved in taking leadership roles in ASPG. All their work is done behind the scenes and, at times, progressing matters can be slow, so it is important to recognise their efforts as they do make a difference.

ASPG Management Committee

President:	Troy Prichard
Vice-President	Matthew Pritchard
Treasurer	Eric Coleman
Executive Officer	Peter Long
Damien Botha	
Rodney Wolfenden	
Emily Zunker	
Russell Mortimer	
Russell McCrystal	

Proposed Marketing Project

There will be over \$2 million in sweetpotato marketing levy reserves when the marketing levy is reduced to 0% in July this year. There is an opportunity to invest a small amount of these funds in a marketing program to lift consumer demand, subsequent sales and in turn, hopefully lift prices. One approach is to undertake a limited merchandising program and gather store sales data where we can identify if the investment has made a difference to sales.

In the last two ASPG Management Committee meetings Hort Innovation staff have joined to discuss a merchandising program for sweetpotatoes. It is proposed that we invest in a pilot program with Coles and/or Woolworths.

During the program, a merchandising team would go to each store weekly to train staff and ensure the displays were up to a high standard. They would also trouble shoot any quality issues with store management. ASPG has offered to support the training of the merchandising teams.

At this stage, it is proposed that 40 stores be part of the program for 12 weeks. It could be 10 Coles and 10 Woolworths stores, or 20 from one supermarket. The supermarkets would obviously need to agree and support the pilot. It would include a display backdrop sign. The critical element would be that store sales

data is provided where we can measure if there has been an improvement in sales.

Before, during and after data could be gathered, as well as similar data from other stores not involved in the pilot program. What will be critical is to gather hard data to assess whether it made a difference in sales. The question was asked about involving Aldi, however, at this stage, it was considered they do a reasonable job of managing instore quality which is demonstrated by the fact they have 10% of total Australian supermarket sales but 14% of sweetpotato sales nationally.

An education video would be developed and shown to staff and new staff on each visit. We all know staff turnover is high and in supermarkets it is around 40% churn. The posters / fact sheets developed by the sweetpotato Quality Project will also be used. Copies of the fact sheets can be seen on pages 5 & 6.





Upcoming Workshops

Bundaberg

Louisiana State University AgCenter & Improving the Quality of Australian Sweetpotatoes Updates

Agenda

LSU breeding program and new varieties – Don La Bonte
Overview of USA sweetpotato industry – Scott Stoddard & Lorin Harvey
Australian Improving Quality Project – Eric Colmen

When: Thursday 18th April
4.30pm to 6.30pm

Venue: Melbourne Hotel meeting Room, 68 Targo St Bundaberg

RSVP: By Tuesday 16th by texting Rach on 0436 928 512

Cudgen

Louisiana State University AgCenter & Improving the Quality of Australian Sweetpotatoes Updates

Agenda

Australian Improving Quality Project – Tristan Kitchener & Andreas Kliber
LSU breeding program and new varieties – Don La Bonte
Overview of USA sweetpotato industry – Scott Stoddard & Lorin Harvey

When: Wednesday 17th April
3.30pm to 6.00pm followed by dinner

Venue: Salt Bar, Mantra Kingscliff, Bell Blvd Kingscliff

RSVP: By Monday 15th April by texting Matthew Prichard on 0408 026 642



Sweetpotato Quality Guide for DC Inspectors

Fun Facts about Sweetpotatoes



Sweetpotatoes come originally from tropical South and Central America. They are **not** related to potatoes. They have delicate skins and hate the cold. **Never put them in a cold room at less than 12°C.**



Inspection and Quality Notes



Keep them cool, never cold

To maintain the best quality of your sweetpotatoes, keep them in the correct temperature zone. 12-20°C is the perfect temperature range for tasty sweetpotatoes. Minimise any time that they sit at any colder temperature, for example during receival inspections or despatch.

Keep at a constant temperature if possible as this extends shelf life and maintains a good appearance. Condensation will be even more of a problem for pre-packs.

Check for quality



Inspect sweetpotatoes against your specifications. Check the sizing and trim diameter and check that progressive and cosmetic defect levels are within specification. Keep in mind that some defects are not very obvious but contribute to a poor eating experience. This includes chilling injury and softness/sponginess of the sweetpotatoes.



Progressive Defects

Watch out for skinning, skin damage, softness (especially of tips), dried-out appearance, chilling injury and pitting, and mould. Fresh skinning may become unsightly if left too long on the store shelf.



Fresh Skinning → Skinning and Dried Out

Major Skin Injury

Chilling Injury



Soft Rot & Chilling

Mould

Nematode Blisters

Cracking

Heat Collapse



Cosmetic Defects

Cosmetic defects do not generally progress and can be of a major or minor nature. This includes superficial insect and nematode damage, misshapen tubers, incorrect sizing, colour defects (e.g. greening), rootlets, and soil adhesion.



Seasonal Defects

Some defects occur more commonly in certain months, whereas others are dependent on practices during harvest and handling.

Skin damage is more pronounced during March to April; do not over-order and turn stock over quickly as quality may deteriorate quickly.

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Skinning & Skin Damage												
Mould & Bacterial Lesions												
Bronzing												



Bronzing of sweetpotatoes is skin deep and develops with crop age in winter months. It does not affect eating quality.



This project has been funded by Hort Innovation using the sweetpotato research and development levy and funds from the Australian Government. For more information on the fund and strategic levy investment visit horticulture.com.au

Sweetpotato Quality for Retail Store Team Members

Fun Facts about Sweetpotatoes



Sweetpotatoes come originally from tropical South and Central America. They are **not** related to potatoes. They have delicate skins and hate the cold. **Never put them in a cold room at less than 12°C.**



Merchandising Notes – Abundant Quality Displays = Sales



Keep them cool, never cold

To keep your sweetpotatoes nice and fresh, hold them in a dark and cool place until moving them to the shelf, never in a fridge.

12-20°C is the perfect temperature range for tasty sweetpotatoes. Keep at a constant temperature if possible as this extends shelf life and maintains a good appearance. Remove from mixed pallets that are moved into the cold room.



Handle with care

To avoid bruising and to keep your displays looking neat and tidy, do not empty trays of sweetpotatoes directly onto your display. Always unpack and arrange your sweetpotatoes carefully, laying each potato gently onto the display in a horizontal direction.



Perfect your presentation as for tomatoes and other vegetables

1. Within each type (gold, purple or white), arrange by freshness to ensure good stock rotation. Place new stock at the back of the display to encourage the purchase of existing sweetpotatoes first.
2. Arrange within these freshness groups according to colour and size. Group sweetpotatoes of similar colour together within each type and arrange larger sweetpotatoes on one side and smaller ones on the other. This will improve presentation and aid customer selection.



Check for quality

Inspect your sweetpotatoes for skin damage, softness (especially of tips), dried-out appearance, pitting and mould on cut ends. Even minor defects can contribute to a poor eating experience, so take time to ensure your sweetpotatoes are in good condition.



The Bad and the Ugly – Ditch them, never leave these on show as they prevent sales!

If you wouldn't buy it, your customers won't either.



I am a bronzed sweetpotato. I may have darker patches on the surface, but I will eat just fine.





Integrated pest management of nematodes in sweetpotatoes

(Hort Innovation Project PW17001)

Funded by Hort Innovation from sweetpotato levies matched by federal government funding.

The final report for this project has now been approved by Hort Innovation. This project was a large 5-year collaboration between the DAF sweetpotato team and the DAF nematology team with multiple focus areas. Twenty-one in depth reports (surveys, workshops, field trials and pot experiments) and 15 fact sheets were produced. Look out for reports appearing on the ASPG website soon.

Key achievements of this project include:

Long term farming systems trials –

- Effective root-knot nematode suppression was achieved by adding high rates (50t/Ha) of banded organic amendments at bed formation combined with resistant rotation crops. This should be accompanied by use of resistant sweetpotato varieties and good weed control.
- The amendments supported an increase in beneficial soil organisms, improved yield and provided long-term soil health benefits.
- A correlation between lower RKN and higher soil carbon was indicated.
- Higher organic matter in wetter years was associated with higher rates of breakdown in roots.
- The rapid domination of reniform nematode in the trial blocks demonstrate that management strategies that may work for one nematode pest won't necessarily control another as different plant parasites may have differing life cycles and survival strategies.

The first comprehensive nematode species survey on sweetpotato producing soils in Australia with 85 fields sampled across all regions:

- Awareness of nematode species diversity and distribution in the industry and on individual farms.
- Root-knot nematode (RKN) was present in 55 fields, primarily *Meloidogyne incognita* (mainly southern regions) and/or *M. javanica* (mainly northern regions). These species were widespread across growing areas. Other species identified were *M. hapla* and *M. arenaria*.
- *Pratylenchus zae* (Lesion nematode) was found in 24 fields.
- *Rotylenchulus reniformis* (Reniform nematode)

was present in 9 fields. New detections in Southeast Qld and northern New South Wales are the most southerly recordings of this species in Australia to date.

- Spiral nematodes and *Rotylenchulus parvus* were present in many fields in low numbers suggesting sweetpotato is not a good host.

Growers have an increased selection of nematode resistant rotation/cover crop options with the screening of 103 cultivars from 33 plant species.

- 36 varieties were identified as resistant or highly resistant to the two most common RKN species.
- 6 varieties were identified as resistant to Reniform nematode.

24 sweetpotato cultivars screened for resistance:

- 15 cultivars were identified as resistant or highly resistant to two species of RKN.
- 1 cultivar was identified as resistant to Reniform nematode.

All weeds should be considered potential nematode hosts. Effective weed control in resistant rotation crops or bare fallows is essential.

New knowledge on herbicide efficacy for volunteer control and safe plant back periods.

An herbicide review identified future chemistry options adaptable to Australian conditions.

Pot experiments found that plants infected with Reniform nematode produced less roots and roots had a higher overall mean weight. This would suggest that damage occurs early at root formation. This is in line with published findings stating that Reniform nematodes tend to feed on fibrous roots and developing storage roots 5 to 10mm in diameter.

Pot experiments indicated that that the higher the *M. javanica* population, the lower the number of premium roots, the lower the overall weight of roots and the higher the percentage of non-marketable roots.

Integrated pest management of nematodes in sweetpotatoes

(Hort Innovation Project PW17001)

Funded by Hort Innovation from sweetpotato levies matched by federal government funding.

Soil surveys demonstrated that sweetpotato production occurs on a wide range of soil types.

Total Organic Carbon (TOC) ranged from 0.21% to 2.35% in Bundaberg and 2.00% to 3.72% in Cudgen, (due in part to cooler temperatures and higher rainfall). Remnant vine scrub soil not disturbed since settlement, gave a result of 7.22% TOC, likely the highest possible carbon storage potential for the area. A sample taken from a best grower practice farm; gave a result of 1.85% TOC.

Results from the nematicide field trial over a winter growing season, showed that the Nimitz alternative application (See report No 21 from the final report) provided the most consistent control of RKN for the trial duration. The Nimitz alternative application also

provided the most consistent control of Reniform nematode over the trial. Vydate and the alternative Salibro application also provided significant Reniform control for much of the trial period. Currently these are not registered application rates and cannot be used in commercial applications. Residue testing is underway.

The project team would like to thank the Project reference group: Matthew Prichard, Rodney Wolfenden, Russell McCrystal, Darren Zunker, Steve Paddon, Eric Coleman, ASPG secretary John Maltby and CEO Peter Long for their advice and assistance throughout this project. The project team is thankful for the assistance from McCrystal Ag, Windhum Farms, Mortimer Farms, Prichard farms, Boon BA & JM company, Green Solutions, Rosie Produce, Greensill Farming, Ag PD and Netafim Bundaberg.



Pest management for the

Australian Sweetpotato Industry Project



(Hort Innovation Project PW22000)

Funded by Hort Innovation from sweetpotato levies matched by federal government funding.

This project builds on a long-term body of work to address the two key pests in sweetpotato production, nematodes, and viruses. The project will continue screening for nematode resistant rotation crops and investigate nematode species diversity/races in Australian sweetpotato growing soils to facilitate effective control strategies.

The project will also provide improved virus diagnostic methods and enhanced capacity to respond to industry needs. Maintaining capacity in the DAF sweetpotato pathogen/virustesting (PT) program limits industry vulnerability in the event of an incursion.

The project commenced in September 2023 with the signing of the contract. Soil samples have been received from key growing regions of Central Qld, Bundaberg and Cudgen with nematode identification commencing. Root samples were examined for the presence of nematode damage, and female root-knot nematodes were excised for molecular identification.

Plant material has been propagated for a field trial to investigate varietal susceptibility to reniform nematodes. The trial is scheduled for planting in early March 2024. Project collaborators have also commenced the first crossing of nematode resistant parents to produce potential *M. javanica* resistant seedlings and true seed has been collected.

16 grower lines and 10 negative and positive Department of Agriculture and Fisheries (DAF) accessions entered the pathogen testing process in January 2024. These plants are also being used to evaluate alternative sample extraction methods for molecular testing to enhance capacity.

To improve accuracy, a virus sampling study will look at the spatial



Rach planted a variety trial to determine the effects of Reniform nematode on the 5-3-24 at the Bundaberg Research Facility in a block with high Reniform pressure.



Left: Plants undergoing pathogen testing at Gatton Research Facility. Right: *M.javanica* resistant parent lines.

distribution of Sweetpotato leaf curl virus (SPLCV) within infected sweetpotato plants to determine the most efficient plant sampling

strategies for accurate detection. This experiment was established in the Gatton glasshouse in February 2024.

The project team are seeking two volunteer growers to participate in a project reference group for this project. This involves attending two meetings per year, in person or online. The project reference group provides tactical direction, oversight and advice to the project team to ensure that objectives and the interests and needs of key stakeholders are met.

Causes and management strategies for skin loss in Sweetpotato

(Hort Innovation Project PW21002)

Funded by Hort Innovation from sweetpotato levies matched by federal government funding.

Skin damage is the major contributor to loss of quality resulting in the downgrading of 10-30% of harvested product resulting in economic loss. There are significant knowledge gaps in the understanding of the outer skin layer in sweetpotato. This lack of knowledge hinders the development of management options for reducing skin loss.

This project will address some of these gaps and identify mechanisms responsible for skin strength/retention through production practices and pre farm gate handling. The project will generate knowledge on practical interventions to reduce skin loss. The project will produce an industry-wide best practice manual of to reduce skin loss.

With the signing of the agreement between DAF and Louisiana State University, project collaborator Professor Arthur Villordon has joined the project team. Arthur visited Australia from the 20th to the 26th of November 2023. Arthur presented an overview of the project in Cudgen and at the ASPG AGM in Bundaberg. The project team took this opportunity to hold a project planning meeting and a Project Reference Group meeting. The PRG provided valuable feedback to the proposed methodology, in particular synching planting dates with known incidence of harvest splitting. The project team reviewed experimental greenhouse studies at the Louisiana Sweet Potato Research Centre and discussed on-farm trials, pre- and post-harvest storage root sampling and deployment of the Smart Spud® in packing lines.

Initial findings from LSU AgCenter greenhouse studies have provided new insights around the mechanisms of skin set in sweetpotato. Preliminary glasshouse work has identified a previously undocumented feature of outer skin development in expanding storage roots. A literature review on the mechanisms of skin formation and strength is underway. Up to six trials will be conducted over the following 2 years. The project team are currently investigating trial sites.



Above: Professor Villordon discusses the project in Cudgen, Bottom: and Bundaberg.

The project team would like to thank the Project reference group, Matthew Prichard and Michael Eden for their time and contributions to the meeting and Matthew Prichard for providing a venue for the Cudgen presentation.

Improving root crop resilience and biosecurity

in Pacific Island Countries and Australia



(Hort Innovation Project 2018/195)

Funded by Hort Innovation from sweetpotato levies matched by federal government funding.



This project builds on a long-term body of work to address the two key pests in sweetpotato production, nematodes, and viruses. The project will continue screening for nematode resistant rotation crops and investigate nematode species diversity/races in Australian sweetpotato growing soils to facilitate effective control strategies.

Improving root crop resilience and biosecurity in Pacific Island Countries and Australia (Project HORT2018/195). Funded by the Australian Centre for International Agricultural Research (ACIAR) from federal government funds.

This project aims to:

- Build on existing international collaborative relationships with researchers from the Centre for Pacific crops and Trees in Fiji.
- Enhance and refine sweetpotato virus diagnostics and maintain capacity.
- Keep abreast of potential biosecurity threats to sweetpotato production in Australia.
- Support increased biosecurity preparedness, surveillance and response.

Australian work

Initial screening experiments were conducted using

silverleaf whitefly and mealy bugs to investigate potential vectors of Sweetpotato chlorotic fleck virus and Sweetpotato collusive virus. Plants from the screening study are currently undergoing virus indexing. A replicated experiment was then designed and initiated in February 2024.

A replicated glasshouse trial to determine optimal parameters for the accurate detection of Sweetpotato feathery mottle virus (SPFMV) focusing on both indicator plant and sweetpotato plant tissue was installed in the Gatton glasshouse in mid-February 2024.

11 accessions from the DAF virus infected germplasm collection were graft indexed in January 2024 and sent for genetic sequencing to determine which strains of Sweetpotato Feathery Mottle Virus or Potyvirus species are present. This will aid accuracy of detection and ensure correct molecular tests are incorporated into the sweetpotato pathogen testing program.



Left: Virus transmission experiment in Gatton. Centre: Propagating virus infected lines for glasshouse trials and Left: Potyvirus symptoms on inoculated indicator plants.

GRKN - Reminder

Although *Meloidogyne enterolobii* or Guava Root-knot nematode (GRKN) has not been detected in commercial sweetpotato production areas to date, on-farm biosecurity measures are your front line of defence to keep GRKN (and many other pests) out of your property.

Like other root-knot nematodes, *M. enterolobii* can be easily spread through infested soil and infected plant material. It is critical that growers are mindful of risk pathways and strive to avoid introduction to their property.

Signage, restricted access (particularly to cropping areas), machinery wash-down and use of clean planting material are all measures which can help to reduce the risk. Simple, low-cost measures can make a big difference in keeping your farm safe.

Good information about farm biosecurity is available through the Farm Biosecurity Website, including the Farm Biosecurity Action Planner. The Australian banana industry has also produced a lot of resources (e.g. Better Bananas On-farm Biosecurity) to help growers protect themselves from Panama disease, and many of the same biosecurity principles can be used to prevent *M. enterolobii* spread and protect sweetpotato farms.

If you see any unusual or particularly severe nematode damage to crops, contact Biosecurity Queensland on 13 25 23 or via the Report a Pest or Disease website portal.

Rotation Crop

Resistance Ratings



To support growers, included is a complete list of rotation crops screen for resistance to root knot nematode. Follow this link to view the comprehensive list:

https://www.aspg.com.au/wp-content/uploads/2022/11/UPDATED-SUMMARY-OF-RESISTANCE-RKN-Rotation-crops-complete-list_top-logo-July-2022.pdf

Rotation Crops with Highly Resistant or Resistant Rating to root knot nematode. This list only includes the cover crops that are Highly Resistant or Resistant to RKN. Follow this link to view the list.

<https://www.aspg.com.au/wp-content/uploads/2022/11/UPDATED-RKN-Resistant-or-highly-resistant-Rotation-crops-top-logo-July-2022.pdf>

Rotation Crops Resistance to Reniform. Cover crops and their resistance ratings to reniform nematode. Follow this link to learn more.

<https://www.aspg.com.au/wp-content/uploads/2022/11/UPDATED-SUMMARY-OF-RESISTANCE-Reniform-Rotation-crops-top-logo-July-2022.pdf>

Australian Horticultural Product in 2022/23



New data shows mixed fortunes for an Australian horticulture sector facing numerous challenges; however, the long-term outlook remains strong with total production value increasing by 2.8 per cent to \$16.3B.

The latest edition of the Australian Horticulture Statistics Handbook, developed by Freshlogic on behalf of Hort Innovation, was released recently and includes information on 75 different horticulture categories across fruit, vegetables, nuts, and greenlife. Hort Innovation chief executive officer Brett Fifield said the result reflected the resilience of Australian horticulture.

“The value of the horticulture sector grew by \$434.3M over the past year, demonstrating the hard work and passion that our industry has for growing high-quality fresh produce that feeds not only Australians but consumers across the world,” he said.

“Growers have faced a myriad of challenges the past few years, including adverse weather events, higher production costs and labour shortages, that have affected profitability.”

The Australian Horticulture Statistics Handbook is released by Hort Innovation each February and captures the previous financial year’s data.

- Total production value of Australian horticulture in 2022/23 increased by \$434.3M (2.8 per cent) to \$16.3B. The rising value was driven by significant value increases in the fruit and vegetable categories – which increased 12.6 per cent and 5.4 per cent respectively.
- It was a strong year for fruit value (increasing \$708.1M) with volume increasing marginally. Growing farmgate production value for fruit value was driven by large increases in production

values for avocados (increasing \$196.9M), table grapes (increasing \$196.4M), bananas (increasing \$81.7M), apples (increasing \$78.4M) and cherries (increasing \$36.1M).

- Solid values for the vegetable industries have been achieved for another year. Overall vegetable production values reached a high of \$5.83 billion, increasing 5.4 per cent on 2021/22. While value increased, vegetable production volume dropped again in 2022/23 by 3.2 per cent, making 2022/23 the lowest year for production volume in six years.
- Overall nuts ended the 2022/23 year considerably weaker – decreasing by 42 per cent, or down \$527 million on 2021/22, to reach \$721.1 million. Volume also softened but at a lesser rate (23.7 per cent).
- The total value of fresh horticulture exports decreased by 3.4 per cent in 2022/23 to \$2.54 billion. Fruit export value increased 6.3 per cent on the previous year, while vegetable export values remained relatively stable dropping just one per cent and nut export value experienced a 15 per cent decrease.
- Of the fruits, table grapes and avocados saw the highest year-on-year growth in export values, which increased 28 per cent and 13 per cent respectively on 2021/22 levels. Nursery, onions, potatoes, strawberries, and watermelon export values all increased in 2022/23, with nursery and potatoes reaching their highest recorded export values.



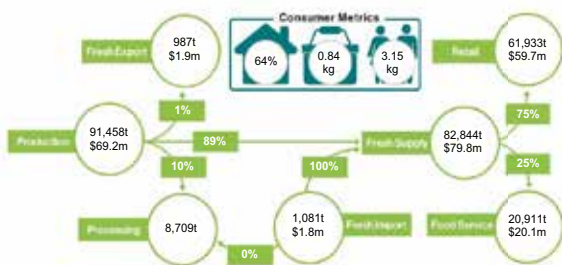
Sweetpotato

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VEGETABLES | SWEETPOTATO

Fresh Sweetpotato Overview

FRESH SWEETPOTATO SUPPLY CHAIN – YEAR ENDING JUNE 2023



Sources: AC, Australian Sweet Potato Association (ASPGA); CFVIWA; GTA; MP & DD (Freshlogic Analysis)

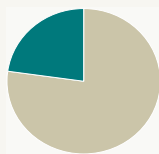
TOTAL PRODUCTION:



\$69.2M

91,458t produced and valued at \$69.2M with 10% sent to be processed.

RETAIL VS FOOD SERVICE:



■ Retail 75% ■ Food Service 25%
The wholesale value of the fresh supply was \$79.8M, with \$59.7M distributed into retail and \$20.1M into food service.

CONSUMER METRICS:

64%

64% of Australian households purchased sweetpotato, buying an average of 837g per shopping trip.

PER CAPITA CONSUMPTION:

3.15kg

in 2022/23 based on the volume supplied.

YEAR ENDING JUNE	2021	2022		2023	
	Value	Value	%YOY	Value	%YOY
Production (t)	104,006	93,172	-10%	91,458	-2%
Production (\$m)	\$91.3	\$66.5	-27%	\$69.2	+4%
Production area (Ha)	-	-	-	-	-
Fresh Export Volume (t)	1,283	1,170	-9%	987	-16%
Fresh Export Value (\$m)	\$3.1	\$2.4	-24%	\$1.9	-20%
Fresh Import Volume (t)	908	1,120	+23%	1,081	-3%
Fresh Import Value (\$m)	\$1.3	\$1.3	+2%	\$1.8	+36%
Fresh Supply (t)	94,606	84,250	-11%	82,844	-2%
Fresh Supply Wholesale Value (\$m)	\$104.4	\$76.2	-27%	\$79.8	+5%
Supply per Capita (kg)	3.67	3.25	-12%	3.15	-3%
Retail Supply (t)	74,201	62,984	-15%	61,933	-2%
Retail Supply Wholesale Value (\$m)	\$81.9	\$57.0	-30%	\$59.7	+5%
Food Service Supply (t)	20,405	21,266	+4%	20,911	-2%
Food Service Wholesale Value (\$m)	\$22.5	\$19.2	-15%	\$20.1	+5%

Sources: AC, ASPGA; CFVIWA; GTA; MP & DD (Freshlogic Analysis)



Fresh Sweetpotato Production

MAJOR PRODUCTION AREAS



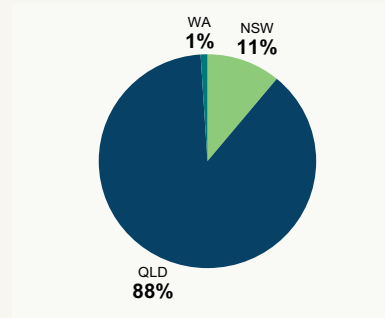
Source: ASPGA

The majority of sweetpotato grown in Australia are produced in Queensland, with smaller volumes grown in Western Australia, Northern South Wales and the Northern Territory.

PRODUCTION WINDOW:



2022/23 FRESH SWEETPOTATO PRODUCTION BY STATE



Source: ASPGA

2022/23 FRESH SWEETPOTATO SEASONALITY BY STATE

State	Volume (t)	Value (\$m)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Queensland	80,483	\$60.9	High	High	High	High	High	High	High	High	High	High	High	High
New South Wales	10,060	\$7.6	None	None	None	None	None	None	None	None	None	None	None	None
Western Australia	915	\$0.7	None	None	None	None	None	None	None	None	None	None	None	None

Availability legend: High (Dark Green), Medium (Light Green), Low (Yellow), None (Grey)

Source: AUSVEG



MAIN SWEETPOTATO VARIETIES

There are three main sweetpotato varieties grown in Australia for the fresh market. These varieties includes:

Gold sweetpotato, also known as the Beauregard which has a rose/gold smooth skin with a moderate deep orange flesh. Gold sweetpotato are accounted for **90%** of fresh production.

Red sweetpotato, also known as Northern Star which has a red purple skin, with bright white flesh. Red sweetpotato are accounted for **7%** of fresh production.

Purple sweetpotato, has white skin, with white and purple flesh. Purple sweetpotato are accounted for **3%** of fresh production.



Sources: ASPGA

2022/23 FRESH SWEETPOTATO SEASONALITY BY VARIETY

Variety	Volume (t)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Gold	82,312	High	High	High	High	High	High	High	High	High	High	High	High
Red	6,402	None	None	None	None	None	None	None	None	None	None	None	None
Purple	2,744	None	None	None	None	None	None	None	None	None	None	None	None

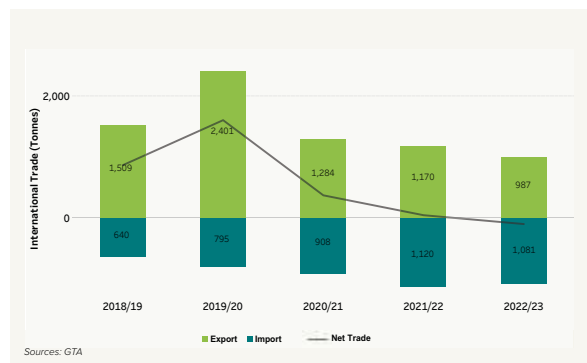
Availability legend: High (Dark Green), Medium (Light Green), Low (Yellow), None (Grey)

Sources: ASPGA

Fresh Sweetpotato International Trade

FRESH SWEETPOTATO INTERNATIONAL TRADE

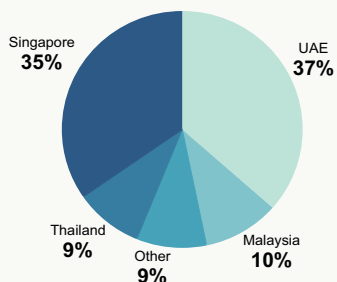
Australia is a net exporter of fresh sweetpotato, with smaller amounts of imports. For the year ending June 2023, Australia exported **987 tonnes** of fresh sweetpotato. The exports and imports over the last five financial years are profiled in the graph below, where imports are counted as negative tonnes.



Sources: GTA



2022/23 FRESH SWEETPOTATO EXPORTS BY COUNTRY



Source: GTA

For the year ending June 2023, 37% of exported fresh sweetpotato were sent to United Arab Emirates (UAE), as profiled in the chart above.

FRESH SWEETPOTATO IMPORTS AND EXPORTS BY STATE

Imports by State Destination (Tonnes)				Exports by State of Production Origin (Tonnes)			
Year Ending June	2021	2022	2023	Year Ending June	2021	2022	2023
New South Wales	130	315	895	Queensland	1,044	911	761
Western Australia	112	146	66	New South Wales	179	233	131
Queensland	610	630	64	South Australia	1	4	53
Victoria	56	29	53	Victoria	51	22	42
South Australia	-	1	4	Tasmania	-	-	< 0.5
Other	< 0.5	-	-	Other	9	< 0.5	< 0.5
TOTAL	908	1,120	1,081	TOTAL	1,284	1,170	987

FRESH SWEETPOTATO IMPORTS AND EXPORTS BY COUNTRY

Imports by Country (Tonnes)				Exports by Country (Tonnes)			
Year Ending June	2021	2022	2023	Year Ending June	2021	2022	2023
Thailand	-	-	551	UAE	520	502	324
China	652	904	289	Singapore	354	335	307
UK	64	62	69	Qatar	92	93	99
United States	-	-	67	Malaysia	101	85	91
Spain	103	127	58	Thailand	< 0.5	77	82
Other	88	28	48	Other	216	78	84
TOTAL	908	1,120	1,081	TOTAL	1,284	1,170	987

Source: GTA

Processed Sweetpotato International Trade

2022/23 PROCESSED SWEETPOTATO INTERNATIONAL TRADE

For the year ending June 2023, an additional 213 tonnes of frozen sweetpotato were imported.



Source: GTA

Update of minor use permit

The APVMA has recently updated the minor use permit for GENFARM METHOMYL 225 INSECTICIDE and other similar products which has Methomyl as the active constituent.

It can be used for: Helicoverpa spp. Cucumber moth Cluster caterpillar Loopers Webworm Rutherglen bug Thrips including WFT.

To find the permit search: <https://permits.apvma.gov.au/PER82428.PDF>



How to calculate the amount of Potassium to apply after a soil test

Article provided by Aus Sweetpotato

Potassium (K) is quite abundant in soils, typically ranging from 0.5 to 4.0%. Of this, only a small part is present in water-soluble and exchangeable forms, and readily available for plant uptake, usually less than 1% of the total. Potassium in soils exist in three distinct forms: unavailable, slowly available, and readily available.



Unavailable Potassium

Unavailable potassium is soil type dependent and accounts for 90-98% of the total soil K is found in this form. Over time the primary minerals that contain K weather, and the K is released. This process is quite slow and cannot meet the requirements of crops.

Slowly available Potassium

This form of potassium is referred to as fixed K as it is trapped between the layers of clay minerals. Plants cannot access much of the slowly available K during the growing season. The amount of fixed K, in the slowly available forms, varies with the type of clay and minerals that dominate a particular soil.

Readily available Potassium

This form of potassium is dissolved in soil water and attached to clay particles (exchangeable K). It is considered readily available for plants to take-up and growth.

Sandy soils have the lowest potassium content, while clay and alluvial soils have the highest. However, even clay soils can become depleted in potassium when considerable quantities are removed in crops such as sweetpotatoes. Potassium that is dissolved in the soil moisture is subject to leaching. It is more readily leached than phosphorus, less so than nitrate nitrogen.

Soil test results

When you get a soil test done, results for elements in the soil test, like Potassium(K) are given in units such as parts per million(ppm), cmol (+)/kg, or meq/100g. (Cmol (+)/kg and meq/100g are the same thing.) To get an understanding of what is already in the soil you need to convert this to kilograms available, in say the top 20cm. To do this you need to use the bulk density of the soil.

Soil bulk density

Bulk density of soils (weight per volume) usually ranges from 1 to 1.6 where sandier soils are heavy and clay soils are lighter.

Typical bulk density values for representative soil textures

Soil Texture	Bulk Density (g/cm ³)
Sand, loamy sand	< 1.6
Silt, silt loam	< 1.4
Clay	< 1.1

If you have a result for K that is .13meq/100g or .13cmol (+)/kg, to convert this to ppm then multiply the test result by the atomic weight of K and multiply by 10 to bring to kilograms.

Calculation: .13x39.1 x 10=50.83mg/kg. Please note, ppm and mg/kg are the same thing.

If we were to assume that the soil sample was taken from the top 20 cm of the soil and the bulk density of the soil was 1.2g/cc, then the **calculation** is:

1.2g/cc x.20m x 100m x 100m x 1000g/kg = 2400000kg of soil.

If we have 50.83mg in a kg then 50.82 x 2400000 = 121968000 mg, divide by 1,000,000 to get kg = 121.9kg

If we assume 40% is available, then we have 48.7kg already there.

Generally, soils in the Bundaberg district would be 1.2 to 1.4. Most laboratories provide the analysis as ppm or mg/kg so it is simply a matter of inserting your ppm and bulk density figure in the last formula. So, the 2.25 figure is closer to the mark.

For further information suggest you contact the agronomist who you use or the DAF sweetpotato team.

Louisiana State University AgCenter

The Australian sweetpotato industry have had a longstanding relationship with the Louisiana State University AgCenter - the world' premier sweetpotato breeding organisation.

Many of Australia's sweetpotato commercial varieties have been bred by the AgCenter and LSU is a current research partner with DAF in a skinning research project. LSU first developed a sweetpotato Foundation Seed Program in 1934. This program operates from their Baton Rouge campus and was upgraded to a virus-tested foundation seed program in 1999.



Tissue culture propagation of virus tested sweetpotato varieties at LSU's laboratory.

The program conducts virus testing and tissue culture propagation to maintain the integrity and quality of sweetpotato varieties. Their mission is to produce virus-tested, certified foundation seed of recommended varieties, including new seedlings with commercial potential. An overview of the program can be viewed here: <https://www.youtube.com/watch?v=PqdeTUX54IM>

Tissue culture propagation of virus tested sweetpotato varieties at LSU's laboratory.



Entrance to the LSU Ag Centre Sweetpotato Research Station, Chase Louisiana

The LSU Ag Centre also established the Sweetpotato Research Station located in northeast Louisiana near the town of Chase. The 300-acre facility is the only one of its kind devoted solely to sweetpotato research. An important function of the station is the production of foundation seed to supply farmers with high quality planting material to keep their crops healthy and sustain the industry.

The mission of the station is to:

- Produce high-quality foundation seed to serve the commercial sweetpotato industry.
- Conduct research in various to improve sweetpotato production.

The Sweetpotato Research Station supplies seed and plant material to all parishes in Louisiana involved in sweetpotato production as well as other US states and countries.

New varieties developed at the station are among the most popular in the world. The LSU sweetpotato breeding program is one of only three active sweetpotato breeding programs in the United States. Varieties developed at the LSU Ag centre, including Beauregard, are grown throughout the United States and around the world. Several varieties have been released from the breeding program over the last ten years, including Evangeline, Bonita, Bellevue, Orleans, Murasaki-29 and Bayou Belle.

These efforts, along with innovative research on physiology, production practices and pest management help keep sweetpotatoes among the most profitable crops to grow. A new processing facility in Delhi will generate further industry expansion.



Field trails of a new variety resistant to guava rook knot nematode with a similar yield to Orleans

US Industry Facts

- United States produced 1.6million tonnes of sweetpotatoes in 2020 and they exported 263,000tonnes primarily to the United Kingdom and European Union. (Australia's production is around 90,000 tonnes annually.)
- Annual production in Louisiana is around 70,000 tonnes and they are grown on 7,300 acres.
- On average, 10.7 tonnes of sweet potatoes are produced per acre. Don't forget, this is all rain feed with no irrigation.

LSU sweetpotato staff

Don La Bonte a professor in the School of Plant, Environmental and Soil Sciences has bred lots of sweet potato varieties in his three-decade career with the LSU AgCenter, including several that have proven big hits with the industry.

But he's always looking to improve on even the most popular varieties. Don has been to Australia and met with growers many times. Don shared:

"The challenge is to try to continually push those boundaries to get that variety that's got that amazing ease of production and also something that consumers want."

"Varieties not only need to have good yields and be resistant to pest problems. They also should look and taste good. It can be difficult to combine all of the traits that farmers, retailers and consumers want. But it's a really fun challenge to try and meet that objective."

Don has found that sweet potato breeding is the perfect marriage of two of his interests: science and art.

"There's a really good element of art involved in this, picking out the different shapes, colours," he said. "You have to have an eye for something that's attractive."



Don La Bonte, Breeder

Queensland Leading Sweetpotato Researcher

Congratulations to Sandra who graduated in December 2023 with a Master of Philosophy degree from the University of Queensland. Sandra heads up the DAF sweetpotato research team.

Her research topic was, Innovative virus diagnostics for the Australian sweetpotato industry, which is testament to her passion for sweetpotato research and her dedication to the industry.

This higher degree involved years of research which she fitted in around her already busy DAF work schedule and other family commitments. It is worth noting that in the acknowledgements section of her thesis, Sandra thanks the Australian Sweetpotato Growers Association for their continued support.



Queensland's leading sweetpotato researcher achieves a milestone - Sandra Dennien



Telling horticulture's sustainability story



Grower groups from across Australia and national representative bodies have jointly supported a newly released 2024 Australian-grown Horticulture Sustainability Framework that will help the horticulture sector share its sustainable, ethical, and safe farming practice stories with stakeholders.

The publication can be accessed through this link: <https://www.horticulture.com.au/hort-innovation/our-work/horticulture-sustainability-framework/>

Developed through Hort Innovation, this resource equips growers to proactively manage sustainability now, and in the future. Hort Innovation worked with more than 600 stakeholders to deliver the Framework, which promotes sustainable and responsible care for our natural environment and provides a vital roadmap for a stronger Australian farming future.

The Sustainability Framework has identified four areas significant to the sustainable production of fruits, vegetables, nuts and amenity horticulture in Australia.

Nourish & Nurture recognises the role of Australian horticultural produce in improving diets, health and wellbeing by providing safe, quality food and Greenlife.

People & Enterprise identifies the strong links between the people, enterprises, communities and economic value of Australian grown horticulture.

Planet & Resources focuses on sustainable agricultural practices by reducing any impacts on the natural environment and on the dependence of horticultural production on resources, biosecurity.

Climate & Waste is about reducing all forms of waste in horticultural production and improving resilience to climatic variability.

Hort Innovation SWEETPOTATO FUND

This project has been funded by Hort Innovation using the sweetpotato research and development levy and funds from the Australian Government. For more information on the fund and strategic levy investment visit horticulture.com.au